CLAIMS

What is claimed is:

1. An evaporative emission control system for a hybrid vehicle, comprising

a scrubber containing an activated carbon fiber material selected to adsorb butane and/or pentane isomer vapors in low concentrations in air passing through the scrubber; wherein said activated carbon material is between and in contact with electrodes of a circuit that can be closed to provide resistive heating of the activated carbon fiber material.

2. An evaporative emission control system for a hybrid vehicle according to claim 1, wherein the activated carbon fiber material has an average fiber diameter of from about 8 to about 10 microns and has an average pore diameter of up to about 20 Angstroms.

3. An evaporative emission control system for a hybrid vehicle according to claim 1, wherein the activated carbon fiber material is derived from novoloid fiber material.

4. An evaporative emission control system for a hybrid vehicle according to claim 1, wherein said electrodes comprise copper or steel surfaces in contact with the activated carbon fiber material.

5. An evaporative emission control system for a hybrid vehicle according to claim 1, wherein the activated carbon fiber material comprises activated carbon fibers in a form selected from the group consisting of pleated sheets, chopped fibers, fluffy webs, and combinations thereof.

6. A hybrid vehicle, comprising an internal combustion engine and an electric motor, the hybrid vehicle further comprising:

a fuel tank for storing a volatile fuel for the internal combustion engine;

a canister having one or more chambers containing activated carbon granules, said canister having a vapor inlet coupled with the fuel tank, a purge inlet coupled to an air induction inlet for the internal combustion engine, and an air inlet, wherein said one or more chambers are located between the vapor inlet and the air inlet; and

a scrubber canister containing activated carbon fiber material coupled to said air inlet, said scrubber canister being equipped with resistive heating apparatus for heating said activated carbon fiber material to a desired temperature;

wherein said activated carbon fiber material has an average fiber diameter of from 8 to 10 microns and pore diameters predominantly from 14 to 22 Angstroms.

7. A hybrid vehicle according to claim 6, wherein the activated carbon fiber material is derived from novoloid fiber material.

8. A hybrid vehicle according to claim 6, wherein said resistive heating apparatus comprises an electric circuit having opposing conductive metal portions in contact with the activated carbon fiber material and having the activated carbon fiber material located between the opposing conductive metal portions.

9. A hybrid vehicle according to claim 6, wherein the activated carbon fiber material comprises activated carbon fibers in a form selected from the group consisting of pleated sheets, chopped fibers, fluffy webs, and combinations thereof.

10. A method for reducing bleed emissions from an evaporative emission control system for a hybrid vehicle having an internal combustion engine and an electric motor, comprising

venting the evaporative emission control system to a scrubber containing an activated carbon fiber material capable of adsorbing butane and/or pentane isomer vapors in low concentrations in air;

heating the activated carbon fiber material containing adsorbed vapors to a desired temperature; and

purging vapors from the scrubber for combustion in the internal combustion engine by passing intake air for the internal combustion engine through the heated activated carbon fiber material during operation of the internal combustion engine.

11. A method according to claim 10, wherein the activated carbon fiber material has an average fiber diameter of from about 8 to about 10 microns and has an average pore diameter of up to about 20 Angstroms.

12. A method according to claim 10, wherein the activated carbon fiber material is derived from novoloid fiber material.

13. A method according to claim 10, wherein said heating step is carried out at a time when intake air is not being passed through the activated carbon fiber material.

14. A method according to claim 10, wherein the heating step and the purging step are carried out consecutively and repeated a desired number of times during operation of the internal combustion engine.